

COLLABORATIVE BUSINESS MODELS FOR EXPLORATION: - THE EXPANSION OF PUBLIC-PRIVATE PARTNERSHIPS TO ENABLE EXPLORATION AND IMPROVE THE QUALITY OF LIFE ON EARTH

In May of 2007, The Space Life Sciences Strategy was published, launching a series of efforts aimed at driving human health and performance innovations that both meet space flight needs and benefit life on Earth. These efforts, led by the Space Life Science Directorate (SLSD) at the NASA Johnson Space Center, led to the development and implementation of the NASA Human Health and Performance Center (NHHPC) in October 2010. The NHHPC now has over 100 members including seven NASA centers; other federal agencies; some of the International Space Station partners; industry; academia and non-profits. The NHHPC seeks to share best practices, develop collaborative projects and experiment with open collaboration techniques such as crowdsourcing. Using this approach, the NHHPC collaborative projects are anticipated to be at the earliest possible stage of development utilizing the many possible public-private partnerships in this center. Two workshops have been successfully conducted in 2011 (January and October) with a third workshop planned for the spring of 2012.

The challenges of space flight are similar in many respects to providing health care and environmental monitoring in challenging settings on the earth. These challenges to technology development include the need for low power consumption, low weight, in-situ analysis, operator independence (i.e., minimal training), robustness, and limited resupply or maintenance. When similar technology challenges are identified (such as the need to provide and monitor a safe water supply or develop a portable medical diagnostic device for remote use), opportunities arise for public-private partnerships to engage in co-creation of novel approaches for space exploration and health and environmental applications on earth. This approach can enable the use of shared resources to reduce costs, engage other organizations and the public in participatory exploration (solving real-world problems), and provide technologies with multiple uses for space exploration and life on earth. Several examples will be provided that demonstrate the application of a technology to solve a space exploration need and to provide a positive impact to the quality of life on earth.